

Memorandum

To : California Regional Water
Quality Control Board
3374 East Shields Ave., Room 18
Fresno, California 93726

Date : September 23, 1983

Subject: Disposal Project Applicat

From : Department of Conservation—
Division of Oil and Gas

Place: Bakersfield

Attached is an application from Hartley Nat. Res. Develop. Coto conduct a water disposal project in the (Upper) Chanac zone(s) in the Main area, Fruitvale field.

The operator proposes to drill/convert well(s) "Echenique" 1 to injection by perforating additional inter-
vals. Additional details are:

1. The base of fresh water is at 3200' at this location. Fresh water will be protected by 5 " casing cemented at 4720' with cement lifted behind casing calculated to fill to 2600'.
2. The mechanical condition of all wells within the project area appear to be adequate to prevent vertical migration of the injected fluid.
3. The water to be injected tests 19,318 ppm TDS and is produced from surrounding wells.
4. Strata in the injection zone contain oil and water testing 22,090 ppm TDS. The injection zone is capped by the Macoma Claystone which measures 335' thick at this location.
5. See attached map for the proposed well location.

Additional supportive data, which are interpretive and therefore confidential, are available for your inspection at this office.

The proposed injection zone has been exempted by the EPA.

Please submit to this office any comments you may have on this proposed project. Your comments are due within 14 calendar days from the date of this letter.

Yours Truly,

David Mitchell

DIVISION OF OIL AND GAS
Notice of Intention to Rework Well

RECEIVED
SEP 20 1983

This notice and indemnity or cash bond shall be filed, and approval given, before rework begins. If operations have not commenced within one year of receipt of the notice, this notice will be considered cancelled. DIVISION OF OIL & GAS
BAKERSFIELD

| FOR DIVISION USE ONLY | | |
|-----------------------|-------|-----|
| BOND | FORMS | |
| | 114 | 121 |
| | | |

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division 3. Public Resources Code, notice is hereby given that it is our intention to rework well No. Echenique No. 1, API No. 029-53923, Sec. 29, T. 29S., R. 27E., M.D. B. & M., Fruitvale Field, Kern County.

The present condition of the well is as follows:

- Total depth.
4720'
- Complete casing record, including plugs and perforations:
8-5/8", 24#, K-55, cem. @ 406' w/ 200 sks₃
5-1/2", 17#, K-55, cem. @ 4720' w/ 307 ft.
Perfs: 4 holes @ 4586' & 4447' squeezed w/ cem.
Ineffective 4571.5'-4564.5', 4483'-4479', 4468'-4465' 4457'-4453'
Effective 4282'-4278', 4205'-4203', 4139'-4134'
Plugs: 4720'-4664', cem. ret. @ 4580', 4571.5'-4535', bridge plug @ 4400', 4400'-4365'
- Present producing zone name Lerdo Zone in which well is to be recompleted Lerdo
- Present zone pressure 1650 psi.± New zone pressure 1650 psi.±
- Last produced Aug., 1982 1 1 ----
(Date) (Oil, B/D) (Water, B/D) (Gas, Mcf/D)
or
- Last injected Never ---- ---- ----
(Date) (Water, B/D) (Gas, Mcf) (Surface pressure, psig.)

The proposed work is as follows:

- Perforate 4 hpf. 4365'-4332', 4314'-4265', 4248'-4200'
- Run tubing with packer set at 4150'±
- Commence injection of waste water

It is understood that if changes in this plan become necessary we are to notify you immediately.

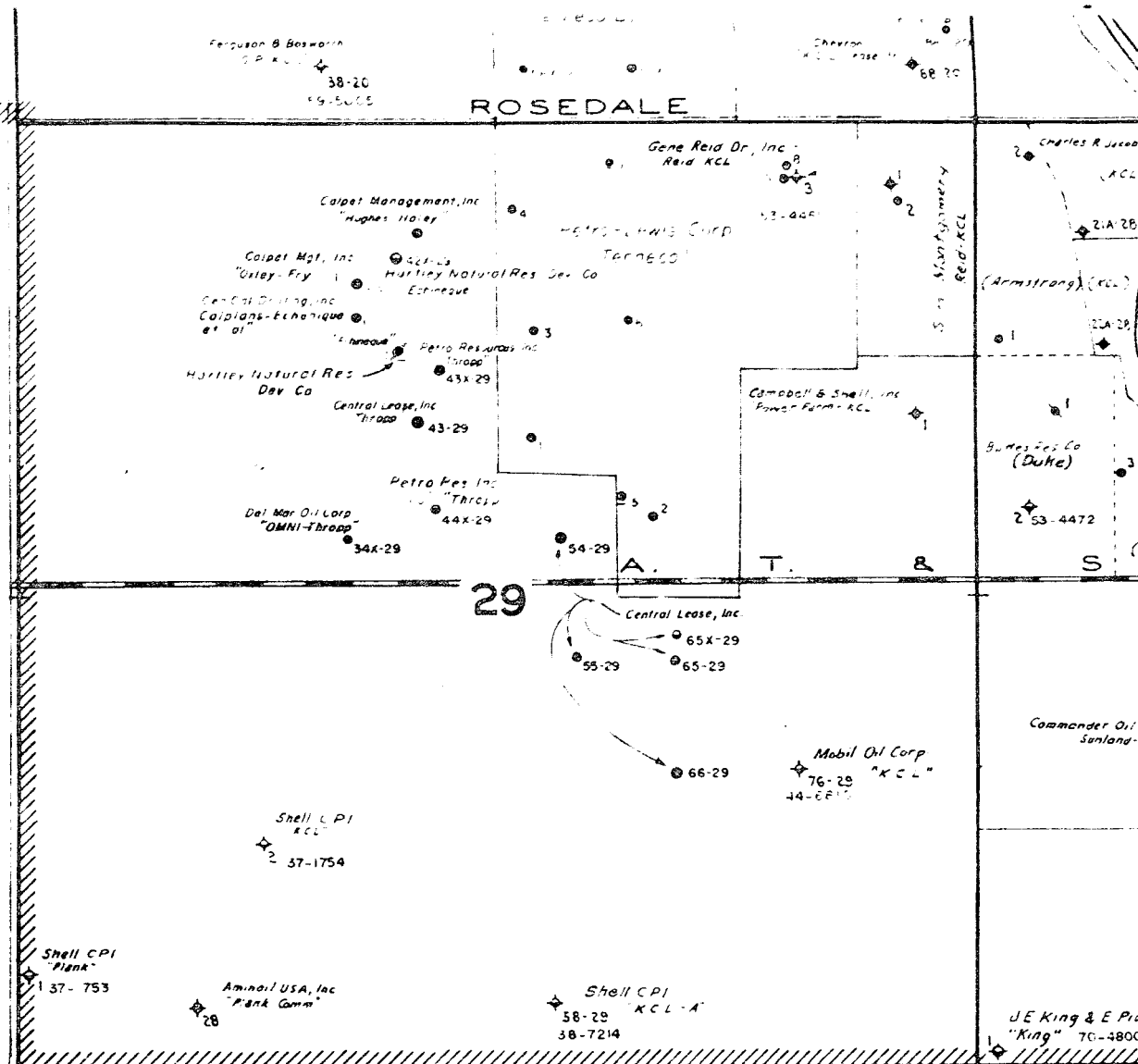
Address 1400 Easton Dr., Suite 144
(Street)
Bakersfield, Calif. 93309
(City) (State) (Zip)
Telephone Number 327-4036

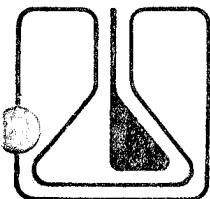
Hartley Natural Resource Development
(Name of Operator)
By David S. Hartley 9-20-83
(Name) (Date)
Type of Organization Partnership
(Corporation, Partnership, Individual, etc.)

Fruitvale Field

Sec. 29, T. 29S, R. 27E

For Adjoining Oilfields see M.





ZALCO LABORATORIES, INC.
Analytical & Consulting Services

RECEIVED

SEP 19 1983

DIVISION OF OIL & GAS
BAKERSFIELD

PETRO RESOURCES INC.
4200 EASTON DRIVE S#16
BAKERSFIELD CA. 93309

LABORATORY NO : 96152
DATE RECEIVED : 9/14/83
DATE REPORTED : 9/16/83

ATTENTION : JOE D. ROSE

Upper Chanac - Injection Zone

SAMPLE DESCRIPTION : THROPP 43X SEC: 29/26 FLOWLENE 9/13/83

GEOCHEMICAL WATER ANALYSIS

| CONSTITUENTS | MG/L | MEQ/L | REACTING PERCENT |
|---|----------|-----------------------|------------------|
| ----- | ----- | ----- | ----- |
| CALCIUM, CA | 126.00 | 6.28 | 0.81 |
| MAGNESIUM, MG | 770.00 | 63.32 | 8.17 |
| SODIUM, NA | 7214.39 | 313.71 | 40.51 |
| POTASSIUM, K | 118.00 | 3.01 | 0.38 |
| IRON, FE (TOTAL) | 14.60 | 0.78 | 0.10 |
| CHLORIDE, CL | 12743.77 | 359.23 | 46.39 |
| SULFATE, SO4 | 14.80 | 0.30 | 0.03 |
| SULFIDE, S | 0.00 | | |
| BICARBONATE, HCO3 | 1683.00 | 27.58 | 3.56 |
| CARBONATE, CO3 | 0.00 | 0.00 | 0.00 |
| HYDROXIDE | 0.00 | 387.12 | 0.00 |
| TOTALS (SUM) | 21829.09 | 774.24 | 100.00 |
| BORON | 14.30 | | |
| TOTAL DIS SOLIDS (GRAV) | 24930.00 | | |
| TOTAL HARDNESS AS CaCO3 | 3510.10 | | |
| SODIUM CHLORIDE, TOTAL | 22089.94 | | |
| PH | 6.75 | PRIMARY SALINITY | 81.03 |
| SPECIFIC GRAVITY @ 60 F | 1.017 | SECONDARY SALINITY | 11.83 |
| | | TOTAL SALINITY | 92.87 |
| ELECTRICAL CONDUCTIVITY, (E.C., MMHO/CM) | 36.05 | PRIMARY ALKALINITY | 0.00 |
| RESISTIVITY @ 25 C | | SECONDARY ALKALINITY | 7.12 |
| (OHM-METERS) | 0.277 | TOTAL ALKALINITY | 7.12 |
| | | LANGELIER SCALE INDEX | 0.45 |

COPY: Robert E. Hartley

Jim Etherton
JIM ETHERTON
LABORATORY DIRECTOR

HORNKOHL LABORATORIES, Inc.

CHEMICAL AND TESTING ENGINEERS

714 TRUXTON AVENUE
BAKERSFIELD, CALIFORNIA 93302
June 29, 1976

Laboratory No. 247963

Marked

Thropp 44X-29

Sample Water

Received June 21, 1976

EXHIBIT "A"Submitted by Airline Oil Company
3930 Rosedale Hwy
Bakersfield, CA 93308

Injection Fluid

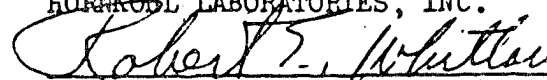
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INDUSTRIAL WATER ANALYSIS

| <u>Constituents</u> | <u>Parts per Million</u> | <u>Grains per Gallon</u> |
|------------------------------------|------------------------------|------------------------------|
| Carbonates, CO ₃ | 0.0 | 0.00 |
| Bicarbonates, HCO ₃ | 1,683.6 | 98.46 |
| Chlorides, Cl | 9,893.3 | 578.57 |
| Sulfates, SO ₄ | 50.4 | 2.95 |
| Sulfides, S | 0.0 | 0.00 |
| Nitrates, NO ₃ | 0.0 | 0.00 |
| Silica, SiO ₂ | 99.2 | 5.79 |
| Boron, B | 3.6 | 0.21 |
| Calcium, Ca | 676.0 | 39.53 |
| Magnesium, Mg | 863.8 | 50.51 |
| Sodium, Na | 4,670.2 | 273.11 |
| Iron, Fe | 18.0 | 1.05 |
| Hardness as CaCO ₃ | 5,230.0 | 305.85 |
| Total Dissolved Solids | 19,318.0 | 1,128.56 |
| pH Value @ 25°C. | | 6.8 |
| Conductivity: Micromhos/cm @ 25°C. | | 22,470 |
| Resistivity: Ohm Meters @ 25°C. | | 0.45 |

Color : Straw
Odor : Petroleum
Turbidity: Medium with suspended oilTheoretical Analysis

| | | |
|---------------------|----------|--------|
| Calcium Bicarbonate | 2,236.9 | 130.68 |
| Calcium Sulfate | 71.5 | 4.17 |
| Calcium Chloride | 285.8 | 16.69 |
| Magnesium Chloride | 3,366.1 | 196.64 |
| Sodium Chloride | 11,870.3 | 693.46 |

Respectfully submitted,
HORNKOHL LABORATORIES, INC.
R. E. Whitlatch, Chief Chemist

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